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PROGRAMME OF WORK OF THE INTERGOVERNMENTAL WORKING GROUP OF EXPERTS ON INTERNATIONAL STANDARDS OF ACCOUNTING AND REPORTING: DISCUSSION OF ACCOUNTING AND REPORTING ISSUES IDENTIFIED DURING THE EIGHTH SESSION

Accounting for environmental protection measures

Report of the Secretary-General

SUMMARY

This is the second report on accounting for environmental protection measures. It is in response to a request from the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting. In particular, the Group wanted to continue research in the area before finalizing its recommendations. The report reviews the responses to the initial recommendations by Governments, standard-setting bodies and industry. It appears that the Group has served as a catalyst for a number of national institutes and they are now examining the problems raised and solutions proposed in the first report. The Group's pragmatic approach was welcomed and subsequent research has demonstrated the practicality of the recommendations since some enterprises have already applied them without undue difficulty. This report presents the new research findings and then, based on these and the comments received, refines the original recommendations.

* E/C.10/AC.3/1991/1.

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INTRODUCTION

1. During its eighth session the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR) took up the question of accounting for environmental protection measures. It was concerned by the fact that environmental expenditures and liabilities were growing in size, especially for those enterprises operating in sectors that had significant impacts on the environment. That concern was being echoed by enterprises and accounting regulators. A number of recent surveys had revealed the preoccupation of business executives with the environment. 1/ Despite the heightened awareness, the consideration of environmental issues in their annual reports was not widespread. 2/ It appeared that the absence of accounting standards allowed enterprises wide discretion in what they reported. The information given on environmental protection measures was largely descriptive and often contained no more than corporate policies or intensions. Little quantitative information was given on a consistent basis which would enable users to determine over time the impact of environmental issues on the financial position and performance of the enterprise. The shortcomings of the current laissez-faire approach had become increasingly evident in the past two years, as revealed in the Group's 1989 survey of 20 enterprises and by increased concern among accounting regulators in Canada, Norway and the United States of America. 3/

2. In the absence of comprehensive accounting standards in the area of environmental protection measures, it was not surprising that ISAR's 1989 review found that both the quality and the quantity of disclosure was quite limited. Generally, when information appeared, it was found in the board of director's report rather than in the financial statements or the notes. In addition to lack of guidance on the subject, enterprises mentioned a number of obstacles which discouraged them from taking or reporting environmental protection measures. First, there was the fact that in many countries expenses were only deductible for tax purposes when paid. As a result, there was no incentive to record liabilities. Secondly, earnings pressures were also noted. Since investors scrutinized earnings per share, enterprises put off taking measures which would reduce income. Lastly, many enterprises complained that it was too difficult to separate environmental costs from others, particularly in the case of investment expenditures. Some of the enterprises said that guidance in the area of environmental disclosure should be more specific.

3. After completing its 1989 survey and considering tentative recommendations to improve information disclosure, the Group felt that it needed more time to study the issues. In particular, it wanted to know more about the type of information enterprises were providing and their practices regarding the treatment of expenses and liabilities in the financial statements arising from environmental measures. In addition, it was interested in comments from Governments, industry and other standard setters on the desirability and practicality of the recommendations contained in the report of the Secretary-General (E/C.10/AC.3/1990/5, annex I). It was already noted that other accounting organizations were beginning to share the concerns of ISAR. It seemed as if the Group had served as a catalyst for similar research, and a number of projects which were under way are described in the current developments report (E/C.10/AC.3/1991/2).

4. The present report examines in greater depth industry practices in disclosing environmental expenditures and liabilities which result from environmental regulations and from voluntary protection measures. The exercise is motivated in part by the possibility that environmental liabilities may be systematically understated and/or that environmental expenditures may be treated as discretionary accruals. The report seeks to solve those reporting problems by proposing a series of recommendations based upon "best practice" in a number of countries. Environmental expenditures are discussed in section I and environmental liabilities in section II. Government and industry reactions to earlier United Nations recommendations are summarized in section III. An extended series of recommendations which build upon the previous recommendations are presented in section IV and some proposals for future work in section V.

I. ENVIRONMENTAL EXPENDITURES

5. One of the obstacles identified in the report on information disclosure relating to environmental measures was that the definition of environmental expenses may be vague. 4/ Many enterprises felt that it was very difficult (if not impossible) to separate environmental costs from other costs, particularly in the case of capital expenditures. That was because environmental improvements were considered to be part and parcel of any investment to replace or expand productive capacity. Segmentation of environmental expenditures was desirable since it enabled users to identify expenditures which benefited the environment. A standardized definition of environmental expenditures enabled those users to compare the disclosures across enterprises. Since there were few guidelines for calculating the costs of environmental measures, it was difficult for enterprises to present such costs in a consistent manner.

A. Survey of industry practices: developed countries

6. In the 1989 survey, some German and Swiss companies were found to be disclosing capital and current expenditures related to environmental measures in their annual reports. In order to gain some insight into how those expenditures were defined, identified and measured, the financial statements of 20 German and Swiss enterprises were reviewed in order to determine which enterprises were disclosing the information. The objective of the new survey was to examine industry practices in detail and to determine whether they were "desirable and practicable" for other enterprises. Of the 20 enterprises reviewed, seven were found to have disclosed considerable information regarding expenditures related to environmental measures. Those seven were selected for further study. They were primarily in the chemical and pharmaceutical or metal and mining industries. The study included a careful analysis of each enterprise's 1989 disclosures and a questionnaire which was completed by each enterprise and reviewed by representatives of Arthur Andersen & Co. (see annex I for details of the questionnaire).

7. The analysis revealed that in many cases, the disclosures approximated those that were suggested in the report on information disclosure relating to

environmental measures presented at the eighth session. Each of the enterprises devoted from one to three pages of its 1989 annual report to the environment. In general, the amount of disclosure was noted to have increased over the amount of disclosure included in the 1988 annual reports.

8. Additionally, the enterprises disclosed the amounts charged to operations in the current period (or multiple periods) and the amount capitalized during the year(s). The table below is an example of the extent of disclosure of current and capital expenditures of one enterprise. All of the disclosures were made in the narrative section of the annual report, as opposed to the notes to the financial statements.

Table. Current and capital expenditure for safety and environmental protection in seven selected enterprises, 1989

(Millions of Swiss francs)

	Home affiliates	Overseas affiliates	Total
Current expenditure			
Product safety	130	110	240
Process safety	90	140	230
Environmental protection (production)	200	260	460
Total	420	510	930
Capital expenditure			
Product safety	20	5	25
Process safety	40	70	110
Environmental protection (production)	180	85	265
Total	240	160	400

Note: Process safety deals with all measures taken to ensure a safe work place and to prevent accidents with their clean-up problems (spills, explosions, accidental discharges). Environmental protection measures are those taken to limit emissions during normal production operations.

9. When asked which methods were used by the enterprises to identify costs related to environmental measures, as indicated in the table, the enterprises responded that the following methods were used:

(a) Industry guidelines;

(b) Guidelines from within the enterprises;

(c) Cost-accounting for production costs, including specific identification of environmental measures in separate cost centres or general ledger accounts, allocation of costs based on percentages of total costs;

(d) Material and energy balance sheets;

(e) Environmental audits.

10. These methods are described below.

1. Industry guidelines

11. German chemical enterprises identify their environmental costs using recommendation of the Business Economics Division of the German Chemical Industry Association (Verband der Chemischen Industrie e.V.). The recommendations, originally published in 1973, are under revision. The recommendations define environmental measures and give guidelines as to how to determine the costs related to such measures.

12. The guidelines indicate that expenditures related to environmental measures should be categorized by the intended purpose of the equipment - that is, the control of air, water, waste and noise pollution. Capital expenditures for environmental measures are defined as all necessary capitalized costs for new or existing facilities that exclusively or primarily reduce damaging influences on the environment from the production facilities. Hence investments for employee protection or for the production of environmentally friendly products or packaging are excluded. Specific lists of items qualifying as environmental measures for each of the four areas considered above are included in the guidelines.

13. The guidelines state that for accounting purposes, either a general ledger account specification or statistical approximations are necessary to capture capital expenditures related to environmental measures. Since not all environmental investments can be viewed as purely related to environmental measures, estimates must be made to determine the portion of the expenditure that is related to the environment. (For example, excess costs of smokestacks or special filters in water sanitation facilities etc.) The estimates should be determined as a percentage or an absolute amount of the total amount of an investment by the planning and construction management departments. The estimates should be based on planned amounts and adjusted as deemed necessary upon review of the completed project. The recording of such investments should be assigned to an appropriate part of the accounting department - fixed asset accounting or technical investment planning.

14. The guidelines also define the operating expenses associated with environmental measures to include primarily production-related costs, and product research and development costs that are solely incurred for environmental protection (as distinct from product improvement). Operating expenses should include those costs that are identified and recorded as environmental costs as well as costs directly related to products (e.g., excess costs due to alternative raw materials being used). The cost of environmental measures include the following direct and indirect items:

(a) Personnel costs;

(b) Energy costs;

(c) Maintenance;

(d) Costs of production materials;

(e) Excess cost due to use of alternative raw materials;

(f) Interest;

(g) Depreciation;

(h) Taxes (capital, salary, property, etc.);

(i) Insurance premiums;

(j) Fees;

(k) Costs related to approvals and permits;

(l) Contributions to community facilities;

(m) Internal costs, including transport, energy, workshops etc.;

(n) Purchased services;

(o) Cost of non-production arising from the shut-down of facilities for safety reasons.

15. According to the guidelines, if costs related to environmental protection are not recorded in specifically identified accounts, estimates are necessary. A meaningful estimate should be made only in consultation with the person responsible for the cost centre.

16. The German Chemical Industry Association has also issued a form for summarizing the costs of environmental measures. The form is organized in a matrix, with four types of environmental measures: waste disposal, water pollution control, noise pollution control and air pollution control as the columns and various types of expenditures as the rows (annex II). The types of expenditures include:

(a) Property additions exclusively for environmental protection;

(b) Environmental protection portion of property additions that are not used exclusively for environmental measures;

(c) Property additions that improve the environmental impact of the production process;

(d) Total current costs of environmental protection.

17. The instructions to the form indicate that property additions must be estimated. If the specific identification of the environmental expense is not possible, then a percentage of the total property addition should be used. The percentage should be estimated by the enterprise's employee responsible for environmental activities in conjunction with the supplier of the equipment and a member of the accounting staff.

2. Guidelines from within the enterprise

18. The survey revealed that where there are no industry guidelines, enterprises had designed their own procedures for keeping track of environmental expenditures and did so on a company-wide basis. One of the respondent enterprises submitted a copy of its internal form upon which environmental protection costs are accumulated by its various subsidiaries (annex III). The form was developed over the past 15 years and separates costs as follows: capital investments; operating costs; research and development expenses; environment administration and planning; remediation measures; and recovered expenses/costs.

19. The instructions to the form tell what to include - thus:

(a) Capital investments. Include infrastructure units used 100 per cent for environmental protection (e.g., effluent plant, incinerator, controlled landfill, sewer systems etc.) and units which are part of a production unit (e.g., off-gas scrubbers, effluent pretreatment units, waste pretreatment, specific measures in a tank farm etc.). Include the relevant fraction of the total project costs;

(b) Operating costs. See guidelines for capital investments above; total operating costs include both internal and external costs;

(c) Research and development. These expenses are probably the most difficult to delimit. Judgement must be used. Generally, they are a fraction of process development which includes other goals. Reasonable estimates should be made;

(d) Environment administration and planning. These include running costs resulting from administration and planning not otherwise included above, including estimated fractions of other services (e.g. legal, data processing etc.);

(e) Expenses for remediation measures. These include old landfills, groundwater etc.;

(f) Recovered expenses. Recovered materials may include reclaimed and purified solvents, certain chemical intermediates, metals (e.g., scrap metal and/or metal-containing sludge etc.) as well as energy from incineration and heat recovery.

20. Further, the instructions state that the borderline between environmental protection and process safety is not clearly defined. The respective safety and environmental departments of the plants should be contacted for the allocation of individual items to these categories. In a general sense, process safety deals with all measures taken to ensure safe work places and to prevent accidents with their follow-up problems (spills, emissions as a result of explosions, accidental discharges) while environmental protection measures are those that are necessary to limit emissions of all types to acceptable levels during normal production operations.

3. Cost accounting for production costs

21. One of the enterprises responded that, annually, a cost accounting by cost centre was performed by the people responsible for the cost centres, using accounts that had been specifically coded as environmental measure expense accounts. Research costs for environmental measures are calculated annually by the enterprise's research department.

22. Another respondent stated that capital expenditures for environmental measures are identified by project engineers for each capital investment project. Each year the amount related to environmental measures is summarized.

4. Material and energy balance sheets

23. One firm indicated in its annual report that results of environmental protection were collected and assessed increasingly systematically by material and energy balance sheets. While such balance sheets were not directly related to financial information, they would be used to determine costs related to environmental measures.

5. Environmental audits

24. A number of the enterprises indicated that environmental audits were conducted primarily by internal departments but also by external consultants. One company mentioned that such audits had been conducted since 1981. While environmental audits were not financial audits, they might be helpful in the determination of environmental expenses.

25. One question which arises is why do German and Swiss firms disclose such detailed environmental information while enterprises from other environmentally conscious countries such as the Netherlands, Norway, Sweden, and the United States do not? Although the annual reports of enterprises in the latter countries may present much qualitative and physical information on environmental matters, it is

not translated into financial terms as in the German and Swiss reports. The detailed disclosures might be explained by a combination of factors, such as tax considerations, pressure from environmental activities, and past experience with social accounting whereby social issues are often discussed in the annual report. When questioned, they explained that since environmental expenditures were a large and growing share of their total expenditures, they felt they needed to keep track of them. Once having the information, they also claimed that the publication of this information was valuable. They received fewer questions on their environmental performance in shareholders meetings and local governments were more likely to grant approvals for their projects based on their reputation for being "open" about information disclosure.

B. Survey of industry practices: developing countries

26. A survey was undertaken in Brazil similar to the one undertaken in Germany and Switzerland. The objective was to identify methods used to report environmental expenditures and liabilities. An attempt was made to review practices at the subsidiaries of the German and Swiss enterprises and at Brazilian transnational corporations. This would cast light on whether the identical environmental reporting policy was applied by transnational corporations in both the home and host country or if it was applied selectively.

27. Ten enterprises were included in the survey: five Brazilian enterprises and five subsidiaries of the German/Swiss transnational corporations. Of the five Brazilian enterprises, four are public companies, three are State-owned and three are transnational corporations. Of the five German/Swiss subsidiaries, one is public. The only special criteria for the selection of the enterprises was that they must be large and have a significant impact on the environment. The economic sectors that have known pollution problems (oil, mining, food, metallurgy, paper, steel, pharmaceutical and chemicals) were chosen.

28. It should be noted that there are no Brazilian accounting standards specifically related to environmental measures. However, the Brazilian Securities and Exchange Commission recommends that the report of a board of directors include a description of investments for environmental protection - their objective and amount.

29. Only one Brazilian firm remained silent on the subject of the environment. Three of the other four firms had between 5 and 15 lines dedicated to the matter; one had a complete page. The enterprises usually discussed their concern with the Amazon region and compliance with governmental requirements for pollution control. None of the German and Swiss firms disclosed anything relevant in their reports, in spite of the fact that this information is disclosed in their home countries.

30. In responding to the questionnaire, four of the five Brazilian enterprises and four of the five German/Swiss enterprises said that they segment environmental expenses from other expenses, allocating them to specific cost centres. Normal cost accounting methods are used in the process. The same treatment was given to accounting for investments. One subsidiary used the format developed by the parent

company to estimate its environmental costs. Only one enterprise in each group did not segment investment expenditures.

31. Two of the Brazilian enterprises and two of the German/Swiss enterprises did not specify what kinds of costs are included in the environmental expenditures. The other companies said expenditures for water treatment, waste gas and air treatment, and solid waste treatment include labour costs, social charges and materials. The German/Swiss enterprises gave more details, mentioning wages and charges, depreciation, energy, materials, scientific instruments, laboratory costs, administration and planning etc. None of the enterprises disclosed the segmented information on environmental expenditures.

32. When discussing the advantages of preventive measures vs. cleaning up later, the Brazilian enterprises responded that they were motivated by avoiding higher future costs, creating a positive image and protecting employees' health in order to maintain productivity. The German/Swiss enterprises mentioned lower prevention costs compared to remediation costs, and keeping a positive image. In addition they said that if they did not incur prevention costs, their chances of remaining a "going concern" were jeopardized.

33. All 10 enterprises reported that current and capital environmental expenditures were undertaken largely to comply with environmental regulations and not on a voluntary basis.

34. In sum, most of the enterprises have voluntarily developed specific accounts for environmental expenses and investment, in order to keep track of measures taken to benefit the environment. The fact that they do not disclose this information is probably because it is not required and because pressure from environmental activists is not sufficiently strong, even though the firms are preoccupied with their image. Alternately, financial reports may not be seen as a means of promoting that image.

C. Conclusions

35. The results of the survey of industry practices demonstrate that accounting for environmental expenses is feasible. Some practices have been in effect for many years, and they are straightforward, practical and time-tested. The difficulties of definition and allocation of expenses to different accounts, raised in the 1989 survey, have not posed insurmountable obstacles, provided use is made of non-accounting personnel with the appropriate technical expertise. While environmental expenditures are capable of definition, that definition is likely to be arbitrary. Ultimately, a judgement must be made as to the items which constitute environmental expenses. There is probably broad agreement that all expenditures to limit emissions of all types to acceptable levels during normal production operations should be considered "environmental expenses". The question which then arises is should this category of expense also include employee protection and safety; production of more environmentally friendly products; use of more environmentally friendly raw materials; accident prevention and process safety; and costs associated with accidents that do take place.

36. The development of an appropriate series of accounts to accumulate these expenses would certainly include accounts specified by the nature of emissions (air, water, land, noise). Such a series of general ledger accounts might include as a minimum:

(a) Liquid effluent treatment;

(b) Waste gas and air treatment;

(c) Solid waste treatment;

(d) Analysis, control and compliance;

(e) Remediation;

(f) Recycling.

Since these expenses are incurred under normal operations, they are relatively easy to identify, estimate and keep track of. Problems are likely to arise if attempts are made to broaden the category and to include additional environmental measures. It is necessary to develop some guidelines regarding items which should be included in order to avoid extreme situations where either nothing is reported or all types of expenses are reported under the guise of environmental protection.

II. ENVIRONMENTAL LIABILITIES UNDER UNCERTAINTIES

A. Survey of industry practices

37. The reporting issues associated with environmental expenses are tractable and are essentially of a definitional and classificatory nature. Unfortunately, environmental liabilities have proven considerably more problematic. Many enterprises surveyed in 1989 and 1990 acknowledged that environmental liabilities existed but were uncertain as to how they might be included in financial statements. The main difficulty was arriving at a "reasonable estimate". The aim of this section is to identify the stage at which a reasonable estimate should be feasible.

38. While the various enterprises surveyed were very open with regard to current costs and capital costs, in the area of accrued liabilities with regard to environmental measures, they were (predictably) reticent. In general, future obligations are recorded as liabilities when a legal obligation (via statute, assessment or otherwise) to remedy an existing situation has been determined. Because of the inherent uncertainties in future legislation, technological change and extent or nature of environmental cleanup required, long-term accrued liabilities are often difficult to determine and calculate.

39. One of the surveyed firms indicated that it estimates the likelihood and cost of cleanup of sites where its United States subsidiaries have been identified as "potentially responsible parties" by the Environmental Protection Agency.

40. While none of the enterprises indicated what their liabilities related to environmental expenditures totalled, one enterprise indicated that its liabilities did not exceed 20 per cent of its annual environmental expense. One of the respondents disclosed in its annual report liabilities related to the disposal of nuclear waste and the restoration of terrain due at the completion of coal mining activities.

41. Three Brazilian firms stated that they did not make provisions for current or future liabilities unless they were involved in a law suit. The same situation prevails generally with the German/Swiss subsidiaries. Only two make provisions for contingent liabilities, but they did not describe the basis on which they do so.

42. Equally, regulatory bodies have had considerable problems with respect to these liabilities. Essentially, the problem revolves around whether the liability to engage in clean-ups or remedial action is identical to other types of contingent liabilities or whether environmental liabilities represent a particular problem. It would seem that in North America, there is some agreement that environmental liabilities are worthy of special attention. The Canadian Institute of Chartered Accountants noted that there may be potentially significant contingent liabilities arising, some of which may be unrecognized and undisclosed. The fact that the current accounting standard was not written in contemplation of the type of massive environmental restoration costs currently facing some entities may be contributing to inadequate accounting. It recommended that provisions are needed to accrue the liability for future removal and site restoration costs, when the likelihood of their occurrence was established as a result of environmental law contract or because the enterprise had established the policy to restore a site.

43. The matching principle would require that the costs of remediation should be matched with the revenues associated with the products which gave rise to the wastes during production. In practice, matching is likely to prove difficult owing to a variety of technological and legal uncertainties in arriving at a "reasonable estimate" of the amount of the liability. The issue revolves around identifying the critical point at which a "reasonable estimate" is possible.

B. Identification and estimation of environmental liabilities

44. In order to identify steps or procedures which could be taken to identify and quantify liabilities, an example was developed based on the clean-up of waste. Inevitably, all production is likely to generate some waste. In the figure the main steps associated with the disposing of existing stocks of waste are outlined. The greatest concern is likely to be with wastes that are not recycled, exceed the assimilative abilities of the environment and have a direct effect upon biota and human beings.

45. Apart from determining the substances which are likely to be hazardous to either biota or humans, the enterprise must make some determination as to what quantities of the substances are harmful. In many respects this is one major obstacle to reporting liabilities. Knowledge at one point in time may dictate that a stock of waste in a firm is not harmful; many years later, it may emerge that the waste was indeed harmful and that it constituted a public danger.

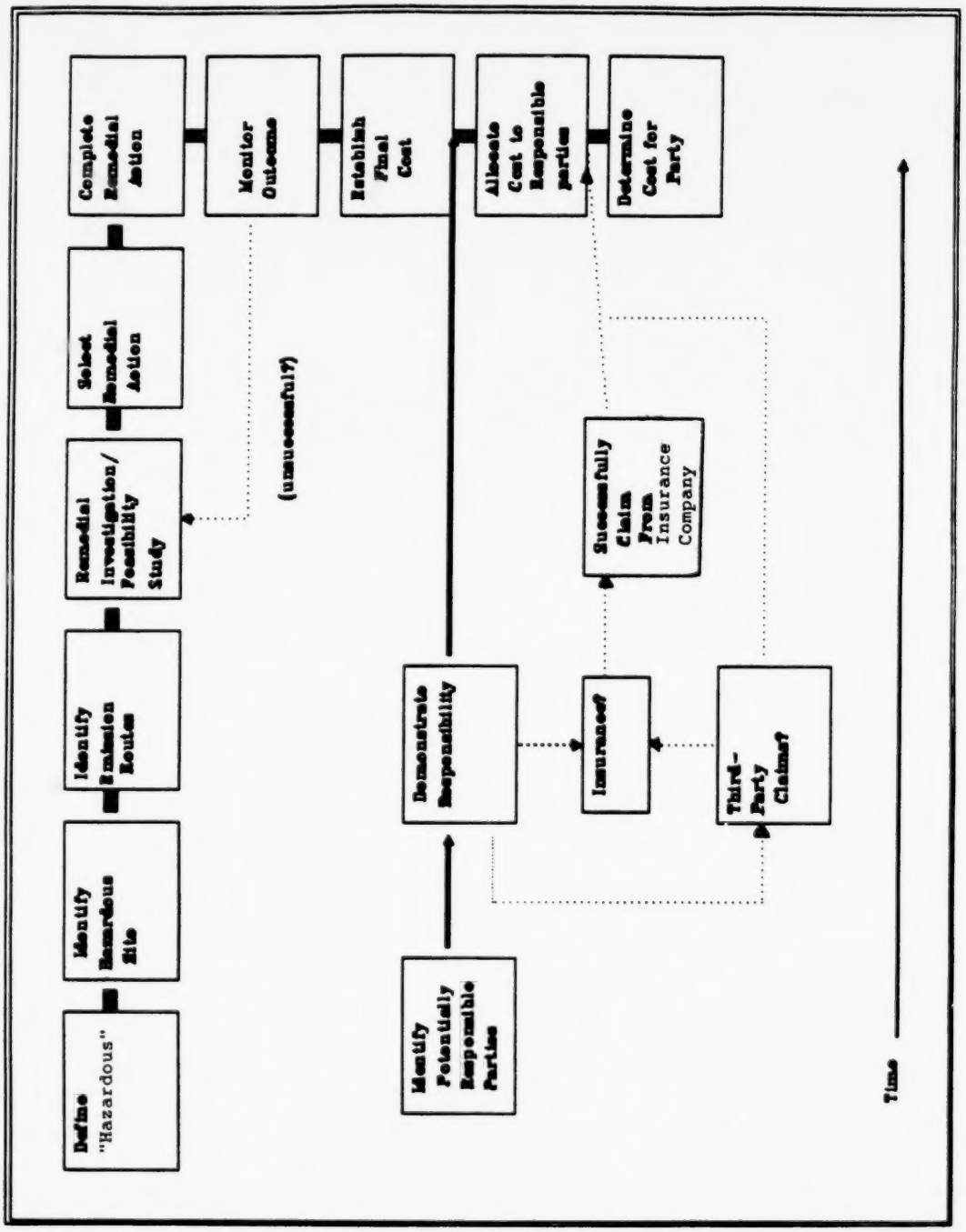

Figure. Steps in disposing of waste and recognizing liabilities

46. The next problem is to determine the extent of contamination and the possible remedies, which may include landfills, underground injection, incineration and biochemical techniques. Over time, as these technologies emerge and develop, their costs change.

47. A feasibility study is normally undertaken by the enterprise. It includes a thorough specification of the nature of the contamination and a series of remedial alternatives, ranging from "quick and dirty storage" to those which go beyond compliance. At this stage, costs should also be attached to the range of alternative remedial actions.

48. Numerous uncertainties arise from the difficulties associated with defining and identifying the emission sites and routes associated with hazardous wastes and with taking remedial action. Technological uncertainties make the extent of the contamination and final cost of remediation difficult to calculate. Legal uncertainties give rise to problems associated with the determination of how the costs are apportioned and to whom they should be apportioned. Regulatory uncertainties compound the problems of waste, because regulatory agencies may have considerable leeway in determining the degree of enforcement, and that leeway may change over time. Remedial solutions that were considered acceptable as effective in one instance may cease to be acceptable as effective in another. Moreover, legislators may alter the amount of pressure exerted upon agencies over time and may enact new regulations which change the scope of the problem.

49. In a world of such uncertainty, there is a case to be made for accounting on a pay-as-you-go basis, since it could be argued that the inclusion of these contingent liabilities in the financial statements might distort the financial position of an enterprise. However, excluding them from the financial statements is equally dangerous for a number of reasons:

(a) Stockholders might attempt to impound an estimate of the liabilities into stock prices;

(b) Shareholders might attempt to litigate for failure to disclose;

(c) Lack of a policy on liabilities under uncertainty will cause subordinates not to bring environmental problems to the early attention of senior management;

(d) A corporate image of secrecy and irresponsibility can result.

50. Some argue that the disclosure of these liabilities might prejudice legal proceedings and encourage actions by affected parties. This could be mitigated if disclosures are limited to the aggregate environmental liability.

51. It would seem that a reasonable estimate should be possible once a feasibility study has been completed. At this stage one would expect that the most likely estimate would be the most appropriate number to accrue. The completion of a feasibility study would seem to mark a critical point, after which estimates (other than the lowest in a range) should be accrued in the financial statements. It might be noted that this approach is used by some environmental risk insurance providers.

52. It should be noted that some regulatory authorities have given additional guidance in the cases where there is a legal responsibility to clean up a waste site. For example, since May 1989 the United States Securities and Exchange Commission requires management to take the following steps in the case of liabilities to remedy hazardous waste sites when they prepare Management's Discussion and Analysis of Financial Condition and Results of Operations:

(a) Determine whether an event is not likely to occur; if it can be determined that an event is not likely to occur, no disclosure is necessary;

(b) If that determination is impossible, then management must objectively evaluate the liability on the assumption that it will come to fruition. Disclosure is then required unless it can be determined that a material effect on the condition or results of the corporation is not reasonably likely to occur;

(c) The latter determination must be objectively reasonable when viewed at the time the determination is made.

53. Management should quantify these liabilities to the extent "reasonably practicable".

54. In practice these guidelines could result in a far greater degree of disclosure than under existing accounting standards, since they require enterprises to prove a negative. Such negative determinations may be difficult to make, especially because of the significant uncertainties that exist. However, this interpretive release eliminates some of the ambiguity associated with existing pronouncements.

55. Consistent with the foregoing approach, accounting and law firms are advising their clients to gather information to develop, if possible, a realistic range of losses based on reasonable "best case/worst case" scenarios. Once such a range has been developed (whether for "losses" or remediation costs), the most likely amount in the estimated range should be charged to current earnings if the loss is probable. If no one amount can be considered most likely, the company should charge the minimum amount in the range to earnings and should explain in the footnotes the rationale used to develop the estimated range of exposure and the range itself.

C. Conclusions

56. Enterprises in the survey record future obligations as liabilities when there is a legal obligation to do so. However, because of technological, legal and regulatory uncertainties, long-term accrued liabilities are often difficult to determine and calculate. The lack of disclosure might be due to the uncertainties surrounding such liabilities. If one considers the nature of environmental liabilities, there are a number of characteristics which increase their uncertainty and size. They are extremely complex, long-term, affect a large number of humans and biota, are synergistic and are sometimes irreversible. The difficulties caused by these uncertainties are real but some attempt must be made to deal with them,

just as in the case of other contingent liabilities (for example, pension costs and warranty expenses). Consequently, some accounting authorities have felt it necessary to give additional guidance. In the case where a legal obligation to clean up exists or where the enterprise has decided to clean up, a reasonable estimate of the liability should be possible before actual clean-up takes place and costs are incurred. In many cases this determination can be made after the completion of a feasibility study of alternative remediation techniques.

III. RESPONSE TO THE RECOMMENDATIONS FOR INFORMATION DISCLOSURE

57. During its eighth session, the Group requested that Governments, other standard-setting bodies, industry organizations and other interested groups give consideration to the desirability and practicality of providing the type of information recommended in the report of the Secretary General (E/C.10/AC.3/1990/5). That information was split into two parts. Part A pertained to information disclosure relating to the enterprise's environmental policy and performance in the report of the board of directors. Part B was more specific and covered disclosure which is needed in the notes to the financial statements and included amounts charged in the current period and amounts capitalized, recognition and booking of liabilities.

A. Governments and standard-setting bodies

58. Almost all of the Governments commenting on the recommendations in the report of the Secretary-General were in agreement. In particular, they thought that enterprises having an impact on the environment should disclose their environmental policies and programmes in the board of directors' report. Some stated that they did not see any difficulties or problems for enterprises if the recommendations were adopted and, furthermore, they were considering incorporating them into national regulations. The view was that the recommendations would enable an enterprise to establish that it was operating in a responsible manner in a country, even in the absence of formal environmental legislative enactments requiring disclosure of such information. Only one Government thought that the scheme might be too detailed. In answering related questions on environmental reports required by the Government and fiscal incentives for environmental protection, it appears that reporting requirements are rather underdeveloped in countries which do not have environmental protection legislation. However, since almost all Governments were anxious to protect the environment, many were providing tax incentives (tax credits, accelerated depreciation) for environmental expenditures. This is not surprising since, although all countries have well established tax laws and authorities to enforce them, many countries do not have environmental laws and enforcement mechanisms. It should be noted that even where there are extensive requirements, users of financial statements do not necessarily have access to government reports in a form usable for their purposes.

59. One standard-setting body noted that existing international standards require disclosure of accounting policies. However, diverse policies are now being used to account for like events. This produces significantly different sets of financial

statements based on the same events and conditions. Some would argue, therefore, that the disclosure of accounting policies for environmental protection measures would only be necessary if diverse practices currently exist. As has been seen in the section above, only a small number of enterprises actually disclose information on environmental expenditures and liabilities. The majority report neither the actual data nor their accounting policies regarding their calculations.

B. Industry

60. It would be safe to say that there is no uniform industry view of the recommendations. The responses ranged from complete agreement - a number of enterprises said that they were already following such practices and that others should do so - to complete disagreement - some argued that existing standards are sufficient. Some companies thought that the information to be included in the report of the board of directors might be too voluminous, was really social information and belonged in a separate report. Enterprises originating in countries where such disclosure very often appeared in the board's report replied that most of the recommendations were already in practice.

61. Regarding information to be disclosed in the notes, some enterprises said that segmentation of expenditures (current and capital) was a standard procedure and that they had been doing it for years, although they generally disclosed it in the board of directors' report. Others from the same industry said that segmentation was too complex and arbitrary. Still others thought that there was a lack of guidelines on when and how to segment expenditures and when and how to accrue contingent liabilities. A number of enterprises thought that the current rules were sufficient for the recognition and booking of liabilities.

62. As was seen in section II, some of the enterprises surveyed are reluctant to recognize such liabilities owing to the uncertainty of the amount, even when they are relatively certain that a liability exists. They are not alone in this reluctance. For example, in the United States some chemical companies have been identified as "potentially responsible parties" at up to 100 sites. But there is uncertainty as to whether they will ultimately be found to be the responsible party. Added to this are the technological problems of specifying the cost of clean-up. Thus, it is difficult to quantify these liabilities. Under present international accounting standards, a contingent liability should be accrued if the loss is probable and can be reasonably estimated. Disclosure should be made if either of these conditions is met, unless the possibility is remote. Since some enterprises have had difficulties applying this standard, United States regulators have clarified what constitutes an uncertainty and the obligation to report under these circumstances.

IV. RECOMMENDATIONS FOR BETTER ACCOUNTING AND REPORTING FOR ENVIRONMENTAL PROTECTION MEASURES

A. Recommendations for the report of the board of directors

63. The Group agreed during its eighth session that environmental protection measures are an important matter and that an enterprise should include at least a description of their environmental policy, programmes and achievements in the report of its board of directors. A reference to a more limited disclosure was made in the Group's 1989 conclusions on the content of the board of directors' report. The present recommendations are more comprehensive. The United Nations survey of industry practices, both in 1989 and 1990, found that some enterprises routinely included environmental information in the report of the board of directors. Some enterprises did this on a very systematic basis. They included in their narratives details on environmental expenditures, both current and capital. Further investigation revealed that the methods they used to segment the expenditures had been in use for a long time, were well-developed and were straightforward even for a complex industry such as the chemical industry. Thus, one could conclude that the methods were practicable. In the light of the 1989 and 1990 findings, the Intergovernmental Working Group may wish to consider the recommendations outlined below for the report of the board of directors. These recommendations pertain to enterprises that have a significant impact on the environment.

64. The report of the Board of Directors/management discussion and analysis should set out the following, when relevant:

(a) The type of environmental issues that are pertinent to the enterprise and its industry;

(b) The formal policy and programmes that have been adopted by the enterprise with respect to environmental protection measures (if no formal policy and programmes exist, it should be stated);

(c) The improvements in key areas that have been made since the introduction of the policy, or over the past five years, whichever is shorter;

(d) The environmental emission targets that the enterprise has set for itself, and how the enterprise is performing relative to those targets;

(e) The extent to which environmental protection measures have been undertaken due to governmental legislation and, if so, the extent to which governmental requirements (for example, a timetable for the reduction of emissions) are being achieved;

(f) Any material proceedings under environmental laws; management should disclose a known potentially significant environmental problem unless it can objectively conclude that the problem is not likely to occur or, if it does, that the effect is not likely to be material;

(g) The financial or operational effect of environmental protection measures on the capital expenditures and earnings of the enterprise for the current period and any specific impact on future periods;

(h) When material, the actual amount charged to operations in the current period, together with a description of the environmental measures to which they relate. This amount might be subdivided into the following general ledger accounts:

(i) Liquid effluent treatment;

(ii) Waste gas and air treatment;

(iii) Solid waste treatment;

(iv) Analysis, control and compliance;

(v) Remediation;

(vi) Recycling;

(vii) Other (for example, accidents, safety etc.);

(Where it is not possible to segregate the amount that relates to environmental protection measures, this fact should be stated.);

(i) When material, the actual amount capitalized during the current period, the accumulated amount capitalized to date, and the period for amortizing, or writing off, such amounts, together with a description of the environmental measures to which they relate. This amount might be subdivided into the categories listed in (h). (Where it is not possible to segregate the amount that relates to environmental measures, this fact should be stated.)

B. Recommendations for the notes to financial statements

65. During its eighth session the Group was concerned about the recommendations for disclosure in the notes to financial statements, particularly those for accounting policies. Since such disclosure would be automatically included under existing international standards, a number of experts thought the requirement could be dropped. Consequently, the list for disclosure has been considerably reduced and includes only identified problem areas where additional guidance seems necessary. Thus, the Intergovernmental Working Group may wish to consider the following recommendations outlined below.

66. The accounting policy notes should describe the policies adopted in accounting for environmental protection measures in, for example:

(a) Recording liabilities and provisions;

(b) Setting up catastrophe reserves (through appropriations of retained earnings);

(c) Disclosure of contingent liabilities.

67. When material, the following amounts should be disclosed in the notes, together with a description of the environmental measures to which they relate:

(a) Liabilities, provisions and reserves that have been set for the current period, and amounts accumulated to date;

(b) Contingent liabilities, with an estimate of the amount involved, unless the event is not likely to occur. The possible loss should be quantified to the extent reasonably practicable. If the possible loss cannot be reasonably calculated, a description of the contingent liability should continue to be furnished and the reason should be given why an estimate of the amount of the loss cannot be made. Completion of a feasibility study of remediation costs may be normally considered as the latest date at which a reasonable estimate of the liability is possible.

V. RECOMMENDATIONS FOR FURTHER STUDY

68. This report has examined industry practices in recording environmental expenditures and identified the difficulties in recognizing environmental liabilities under conditions of uncertainty. It has suggested broad guidelines for recording expenditures and procedures which could be used to decide when liabilities should be recognized. Obviously, more work needs to be done in this area, and the Group may wish to consider the following topics as well as propose others:

(a) Development of more explicit guidelines and prototype lists of items which should be considered as environmental expenditures;

(b) Further study of techniques for estimating environmental contingent liabilities under uncertainty;

(c) Impact of recent additional guidance on reporting environmental contingent liabilities;

(d) Recognition of the impairment of long-lived assets arising from environmental degradation and their related indemnities, if any;

(e) Methodology for including the impairment of natural and environmental resources in the financial statements, including natural resource accounts.

69. The first three topics come out of the present investigation which underlies this report. Work under (a) could contribute to "comparability" in disclosure across countries by developing a standard list of environmental expenses. Regarding (b), it appears that the preparers of financial statements have little experience using estimation techniques for environmental liabilities. They might benefit from a description of available techniques along with their advantages and disadvantages. A recent study confirmed this and noted that while most companies

understood the probabilities of their own environmental incidents (discharge, compliance, failure, emergencies), they lacked tools to assist in measuring potential liabilities in order to make appropriate management decisions. If additional guidance solves the current reporting problem of contingent liabilities, it might be considered for inclusion in existing standards. The impact of this additional guidance on disclosure could first be evaluated under (c). During the course of this report, it was not possible to discuss related issues in (d) - such as the impairment of long-lived assets - but guidance is probably needed in this area.

70. There are some accounting experts who believe that present accounting concepts and systems are insufficient to deal with environmental concerns and that a new accounting framework must be developed which would redefine asset and liability boundaries. 5/ Work could be undertaken on extending those boundaries and applying approaches now used in national income accounting, as described in (e). Since the bulk of economic activity and therefore the greatest environmental impact derives from corporate activity, it seems essential to try to incorporate those concepts into corporate accounting. Environmental economists currently distinguish between man-made capital, substitutable natural capital, critical natural capital (which cannot be substituted for or replaced once depleted). Accounting currently recognizes only the "priced" elements of these. Efforts are under way to develop a "shadow" accounting system for corporations so that they can trace diminutions in natural capital. The basic aim would be to produce a very rough estimate of the sustainable cost of their activity - that is, to recognize, but not to book, the costs of restoring the environment after each action - in order to inform managers and external shareholders of the extent to which current prices underrepresent the actual costs of production. The design of this new accounting system would be experimental in character and would be undertaken to explore the feasibility of such an approach, rather than to make any specific recommendations at this stage.

Notes

1/ The World Economic Forum found that 650 executives considered the environment the most important challenge affecting business during the 1990s. This view is reiterated by that of 87 per cent of the finance directors polled in the United Kingdom by Coopers & Lybrand, who saw environment as a significant issue for their business. Fifty-five per cent believe it raises financial concerns for their companies. They have discovered the need to change their approach and resource allocation not just because it is good for the environment but because it is good for business. Specifically, some enterprises are changing the way they view environmental expenditures from an "expensive annoyance" to a normal "cost of doing business" and to an "essential component" of a healthy corporate image".

2/ Only 27 per cent of the United Kingdom enterprises in the 1990 Coopers & Lybrand survey reported anything on the environment in their annual reports.

3/ For example, the amended Enterprises Act of Norway (1989) requires the inclusion in the board of directors' report of physical information regarding emissions and contamination and details about environmental measures planned or

performed to clean up the environment. In the United States certain environmental disclosures must be made in the narrative portions of Securities and Exchange Commission filings. The Securities and Exchange Commission Regulation S-K Item 101 requires enterprises to disclose the material effects that compliance with environmental laws may have on capital expenditures, earnings and competitive position. Item 101 requires disclosure of certain existing estimates of current and future environmental expenditures. Under Regulation S-K Item 103, a corporation must disclose significant environmental, administrative or judicial proceedings (both contemplated by the Government and pending) that will have an impact on it. In addition the Securities and Exchange Commission has informed corporations that it also expects to see environmental liabilities addressed in the narrative discussion of financial conditions known as Management's Discussion and Analysis of Financial Condition and Results of Operations. In Canada the Ontario and Quebec Securities Commissions require listed companies to include the financial or operational effect of environmental protection requirements on the capital expenditures, earnings and competitive position of the Issuer for the current fiscal year and any expected impact on future years. The Canadian Institute of Chartered Accountants recently approved an accounting standard on capital assets which requires that provisions be made for removal and site restoration costs. The Canadian Standards Committee decided to proceed with issuing this standard in view of the potential magnitude of the costs and so as to achieve some consistency in practice.

4/ The report (E/C.10/AC.3/1990/5) specified a series of measures that could appropriately be considered environmental expenses.

5/ Rob Gray, The Greening of the Accountancy: The Profession after Pearce (London, Chartered Association of Certified Accountants, Research Report No. 17, 1990); and Dan Rubinstein "Bridging the gap between accounting and black ink", paper prepared for the London School of Economics Workshop on Green Accounting, London, December 1990.

Annex I

QUESTIONNAIRE FOR THE SURVEY OF INDUSTRY PRACTICES

1.1 How do you separate environmental costs from other kinds of expenditures?

Do you have guidelines for such identification of environmental costs? If so, please send us a copy.

1.2 What types of costs/expenditures are included as "expenditures for environmental measures"?

1.3 Are such costs compiled through the accounting system?

2.1 Do you currently capitalize investments for environmental measures?

2.2 Are accruals established for costs related to improvements in the environment?

2.3 Upon which basis do you estimate such costs?

3.0 What guidelines do you use to budget your investment and expenditures related to protection?

4.0 What techniques do you use to estimate current and future liabilities?

5.0 Do you conduct environmental audits using either internal or external qualified auditors?

6.0 How have your accruals and expenditures for environmental measures changed since 1987?

Please compare your total environmental accruals at year-end with your total environmental expenses for each year from 1987 through 1989.

7.0 What impact do fiscal incentives/disincentives (e.g., tax regulations, tax credits, accelerated depreciation, government grants etc.) have on environmental protection expenditures or on accounting for environmental measures?

Annex II

COMPOSITION OF ALL EXPENDITURES/COSTS OF THE CHEMICAL INDUSTRY FOR ENVIRONMENTAL PROTECTION IN FISCAL YEAR 1989*

(Thousands of DM)

Company: Person working on this questionnaire: Phone No.:	Turnover for the year ____
Number of employees in classes: I /_____/ II /_____/ III /_____/ IV /_____/ 1-49 50-199 200-999 over 1,000	All company's investments in tangible assets (property)

Property additions for pollution control (investments) bought; self-constructed properties and properties under construction at this time.

	Expenditures for the types of environmental measures			
	Waste disposal	Water pollution control	Noise pollution control	Air pollution control
1. Property additions exclusively for environmental protection				
a. Built up areas, buildings and building improvements - building-related costs				
b. Land and land improvements				
c. Machinery and equipment				
2. Environmental protection of property additions that are not used exclusively for environmental measures				
3. Property additions that improve the environmental impact of the production process (Product-related investments) Only investments due to laws or governmental advice				
Property additions for environmental protection (1+2+3)				
Total current costs of environmental protection (including fees, subscriptions and prohibitions, subsidies from Government)				

Source: Association of the Chemical Industry Department: Taxes, Finance, Economics and Business Administration.

* Sample questionnaire.

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Annex III

INVESTMENTS AND EXPENDITURES FOR ENVIRONMENTAL PROTECTION*

Group company: _____ Site: _____

Currency: _____ Units: _____ Year: _____

A.	Capital investments	
1.	Effluent treatment, aqueous	.....
2.	Waste gas and air treatment	.....
3.	Solid waste treatment	.....
4.	Analyses and controls, instruments, laboratories	.....
5.	Others (specify - e.g., recycling)	.....
	Total investments	
B.	Operating costs	
1.	Effluent treatment, aqueous	.....
2.	Waste gas and air treatment	.....
3.	Solid waste treatment	.....
4.	Analyses and controls, instruments, laboratories	.....
5.	Others (specify - e.g., recycling)	.....
	Total operating costs	
C.	Research and development expenses	
1.	Process development of production process	.....
2.	Process development, waste elimination process	.....
3.	Others (specify)	.....
	Total research and development	
D.	Environment administration and planning	
E.	Remediation measures	
F.	Recovered expenses/costs	
1.	Value of recovered materials	.....
2.	Value of recovered energy	.....
3.	Services rendered to third parties	.....
	Total recovered	

* Sample form.